

SSLC EXAMINATION MARCH 2019

S1919

ANSWER KEY PHYSICS

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SECTION A

Answer any 4 questions each carries 1 score.

1. They are Inversely proportional ($V=f\lambda$)
2. Red colour
3. To measure the amount of electrical energy used by the consumers.
4. Increase concentrations of greenhouse gases.
5. Green 1 x 5

SECTION B

Answer any 4 questions each carries 2 score.

6.

Longitudinal waves	Transverse waves
(i)	(ii)
(iv)	(iii)

1/2 x 4

7. (a) High melting point
(b) Argon or Krypton (sometimes) or inert gases 1 x 2
8. (a) Thick and long
(b) Metallic part of the electrical devices. 1 x 2
9. (a) We can increase the specific heat capacity by adding propylene glycol in water. This can absorb more heat produced from the mechanical parts.
(b) It is because of latent heat of vaporization. ... Hence, as steam has more heat energy, it can cause more severe burns than boiling water at same temperature. 1 x 2
10. (a) Mainly composed of Methane.
(b) Energy density is high, so as to store and transport more volume. 1 x 2

SECTION C

Answer any 4 questions each carries 3 score.

11.

- (a) Bulb A, The bulb A is connected to an DC and The bulb B is connected to an AC source and due to self-induction, back emf is produced in second circuit and the effective voltage is less compared to the first circuit. 2 x 1
(b) Brightness of A remains unchanged and B will be less. (Rate of self-induction increases when we insert a soft iron core) 1 x 1

12.

(a) $V_p = 240V, N_s = 80, N_p = 800$

$$V_s = N_s / N_p * V_p$$

$$= \frac{80 \times 240}{800} = \underline{24 V}$$

800

2 x 1

(b) Secondary coil.

1 x 1

13. (a) Star connection.

(b) 400V

(c) Because the potential difference between neutral line and person in contact with earth is zero.

1 x 3

14. (a) Transparent Beaker, sodium thiosulphate, Hydrochloric acid and source of white light.

1 x 1

(b). Allow white light to pass through the beaker filled with sodium thiosulphate and observe the colour of solution i.e. white, add few drops of hydrochloric acid then the colour gradually changes to blue colour based on the particle size of precipitation formed and the blue colour spread over the solution due to the scattering of light.

2 x 1

15. (a) X is violet

(b) 2

(c) The bottom part of rainbow is usually blocked by horizon. If we moved up in horizon in an aeroplane or some other then we can see a full circle rainbow.

1 x 3

SECTION D

Answer any 4 questions each carries 4 score.

16. (a) Reverberation is the booming sound hearing due to multiple reflection from a surface.

Echo is the repeated hearing of original sound due to multiple reflections.

1/2 x 2

(b) $v = 1500m/s, t = t/2 = 3s, d = ?$

$$d = v \times t$$

$$= 1500 \times 3$$

$$= \underline{4500 m}$$

2 x 1

(c) 17m (340 x 1/20)

1 x 1

17. (a) $P = 920w, V = 230v$

$$P = IV$$

$$I = P/V$$

$$= 920/230$$

$$= \underline{4A}$$

1 x 1

(b) $P = 920 \text{ W}$, $t = 5 \text{ min} = 5 \times 60 = 300\text{s}$

$$H = Pt$$

$$= 920 \times 300$$

$$= \underline{276000 \text{ J}}$$

2 x 1

(c) By changing the current or voltage to the heater within the maximum limit of device. 1 x 1

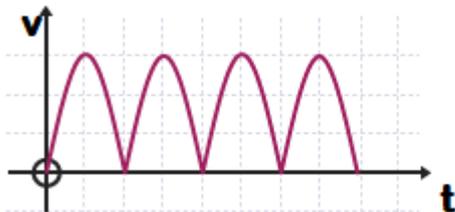
18. (a) Because when ice melts it absorbs a lot of heat (high latent heat of fusion or heat of crystallization), making the surrounding ice colder and colder so the glaciers do not melt as a whole at same instant. 2 x 1

(b) Potential energy increasing,

Increasing the temperature of a substance means increasing the molecular motion (kinetic energy) of the molecules in the substance. This energy, called heat of fusion or heat of melting, is absorbed by the particles as potential energy and the separation between the molecules increases as it changes from ice to water. 2 x 1

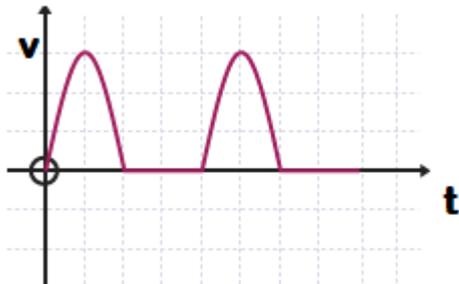
19. (a) Diode 1 x 1

(b) Full wave rectifier output graph .



1 x 1

(c) If one diode is removed from circuit the output will be half wave and the circuit become half wave rectifier.



2 x 1

20. (a) It is because hydrogen is a highly combustible and it reacts explosively when it comes in contact with air. And hence as a result, storing of the hydrogen gas is difficult and is dangerous at the same time. So, even though hydrogen has the highest calorific value, it is not used as a domestic fuel. 1 x 1

(b) Liquid hydrogen as rocket fuel ,Hydrogen fuel cells etc...

1 x 1

- (c) Burn easily in air
Readily available
Easy to transport
Easy to store
Maximum calorific value
Less atmospheric pollution
Rate of evaporation is less at normal temperature

(Any four)

1/2 x 4

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If you noticed any mistakes or confusions, kindly informs me
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